

HT # 700079

1154



Frisa Forjados SA, de C.V.

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Sta. Catarina, N.L., México

CERTIFIED COMPANY
ISO 9001: 2015

Material Test Report No.672329

Certificate per: **EN 10204:2004 3.1**

Client: **ASA ALLOYS**

Spec: SA-182/SA-182M (**F316/316L**) Ed. 2017

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Qty	Date	P.O. Number	Part No.	Job Order
1	12/06/2018	P044194		542947
Description Forged Disc 34.000" X 0.000" X 6.400" .MELTING PRACTICE: EAF AOD .SERIAL NUMBER NOTE: 542947-01 .LINE ITEM: 001				

HEAT: 700079 (1/1) PCS
CHEMICAL ANALYSIS

HEAT No.		C %	Mn %	P %	S %	Si %	Ni %	Cr %	Mo %
700079	Ladle	0.01900	1.86000	0.02800	0.00070	0.37000	10.15000	16.80000	2.06000
Supplier		N %							
Cogne USA	Ladle	0.08000							

HEAT TREATMENT

Quantity	Heat Treat Lot No.	Heat Treatment	Temp. (°F)	Time at Temp (Hrs)	Cooling Medium	Quench. M. Temp. (°F)
1 PCS	540609	Solution annealed	1922	5.00	Water	

Heat: 700079

Track ID: 169/012-17

MECHANICAL PROPERTIES

TENSILE TEST

Orientation	Position	Location	Heat Treat Lot No.	Yield Strength (PSI)	Tensile Strength (PSI)	Elong. (%)	A.R. (%)	Temp Tens °F	Post Welding HT		
									Temp °F	Time	Cycle
Long	1/4 T		510405	41000	81400	62	80	77			

Heat: 700079

HARDNESS HBW QTC

Orientation	Position	Location	Heat Treat Lot No.	Point	Hardness	Post Welding HT		
						Temp °F	Time	Cycle
Long	1/4 T		510405		154			
Long	1/4 T		510405		156			

WE HEREBY CERTIFY THAT ALL TEST RESULTS AND PROCESS INFORMATION CONTAINED HEREIN ARE CORRECT AND TRUE AS CONTAINED IN THE RECORDS OF THE COMPANY AND MEET THE PURCHASE ORDER / SPECIFICATIONS REQUIREMENTS.

NO WELDING REPAIRS IS ALLOWED AND USED IN FRISA ALL MATERIALS ARE MERCURY FREE

CER F-001-3

Aneliz Carolina González Gutiérrez

QUALITY ASSURANCE ENGINEER

CA 114627 1/3



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OBSERVATIONS
. FORGING RATIO: 6.6 TO 1 . QTC SIZE (4 X 4 X 12) . TENSILE TEST: 0.500" DIAMETER SPECIMEN AND 2.0" GAUGE LENGTH . FURNACE CALIBRATED AND SURVEYED PER API 6A ANNEX M 20th EDITION REQUIREMENTS . HARDNESS ON TEST SPECIMEN IS REPRESENTED BY TWO VALUES. . TESTING ACCORDING TO ASTM A370 REV.14 . NACE MR0175/ISO 15156-1:2015(E)

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CER F-001-3

Aneliz Carolina González Gutiérrez

QUALITY ASSURANCE ENGINEER

2014627
5/4



HARDNESS TEST REPORT (HBW)

Job Order 542947

500 kg. 3000 kg.

Customer: ASA ALLOYS

Part Number: _____

PO: P044194

Specification: SA-182/SA-182M (F316/316L) Ed. 2017

Line Item: 001

Specified range: 0 - 999 HBW Indentation Qty: 2

SN	Heat	Heat treat lot	Date *	Equipment	Scope	1	2
542947-01	700079	540609	09/06/2018	KE-55	BOSS-6	151	157

Testing standard: Rev. / Type A

* (dd/MM/yyyy)

Applied Load: 3000 Kg.

Type of penetrator: 10 mm tungsten carbide ball, 20X Scope used

Test Performed at ambient temperature

Test block serial number Internal verification:

Equipment : KE-55 KE-55

Block Serial Number : 180187 0203971

Value / Average : 410 | 411 101 | 101

Comments:

Serial Number of hardness test equipment:

KE-55 Serie: AK-25

BOSS-6 Serie: 269 GS

Hardness test : Accept



Inspector: Raul Aaron Perez Cruz

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